MARKED-UP CLAIMS WITH AMENDMENTS SHOWN

1. A method to optimize information retrieval based on communication relationships, comprising the steps of:

automatically extracting and integrating relationship information from multiple heterogeneous information sources;

automatically building and storing a relationship data structure to represent the relationship information; and

automatically modifying [a] an information retrieval query based on the relationship data structure.

40. A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps for optimize information retrieval based on communication relationships, said method steps comprising:

automatically extracting and integrating relationship information from multiple heterogeneous information sources;

automatically building and storing a data structure to represent the relationship information; and

automatically modifying [a] an information retrieval query based on the relationship data structure.

NEW VERSIONS OF CLAIMS 1 AND 40 WITH INCORPORATED AMENDMENTS

1. A method to optimize information retrieval based on communication relationships, comprising the steps of:

automatically extracting and integrating relationship information from multiple heterogeneous information sources;

automatically building and storing a relationship data structure to represent the relationship information; and

automatically modifying an information retrieval query based on the relationship data structure.

40. A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps for optimize information retrieval based on communication relationships, said method steps comprising:

automatically extracting and integrating relationship information from multiple heterogeneous information sources;

automatically building and storing a data structure to represent the relationship information; and

automatically modifying an information retrieval query based on the relationship data structure.

REMARKS

Claims 1-41 are currently pending. The Examiner has rejected Claims 1-6, 11, 23, 24, 26-31, 33 and 37-41 under 35 USC §103 as unpatentable over the Paul, et al patent. The Examiner has indicated that Claims 7-10, 12-22, 25, 32 and 34-36 are allowable over the cited art. For the reasons set forth below, Applicants respectfully submit that Claims 1-41 are patentable over the cited prior art.

The Paul patent is directed to an electronic mail (hereinafter "e-mail") filtering system which compares content of an incoming e-mail message to a list of terms on an exclusion list. If the incoming e-mail content matches any term on the exclusion list, the e-mail is marked as "junk mail". The exclusion list can be updated by information from external sources, such as the so-called spam probes placed strategically in the network. The spam probes are homogeneous "sources" which simply convey address information to be added to the exclusion list. The intent of the Paul system is simply to monitor incoming e-mail. Paul includes no disclosure of, or suggestion of, information retrieval, as is expressly recited in all of the pending claims and is highlighted by the present amendments to the independent claims.

Applicants note that the first claim step is the step of extracting and integrating relationship information from multiple

heterogeneous information sources. Applicants refer the Examiner to the Specification (e.g., page 7, line 12-page 8, line 12) where the term "relationship information" is detailed. As a first argument, Applicants assert that the Paul patent teachings do not discuss or suggest the concept of "relationship information from multiple heterogeneous information sources". The cited teachings of the Paul patent do not teach or suggest communications relationship information nor do they teach or suggest steps of extracting and integrating communications relationship information from multiple heterogeneous information sources. The present invention extracts communications relationship information, as detailed on pages 7 and 8, from multiple heterogeneous sources (including calendars, network information, organization charts, e-mail databases, etc.) in order to facilitate information retrieval queries (and resulting communications) using that relationship information. The present invention does not seek to exclude information/communications like Paul, but rather seeks to facilitate information retrieval and communications.

The primary Paul teachings relate to examining the "FROM" field of an incoming e-mail or the text of the e-mail and comparing it to entries in an exclusion list. The "FROM" or text information is not extracted from the e-mail, nor is that information integrated with any other information from any other sources. The text is simply compared. Clearly, therefore, the

Paul step of comparing would not suggest extracting and integrating as claimed. Further, the Paul step of flagging or marking the e-mail as "junk" would not suggest extraction and integration of relationship information from the e-mail. The Paul step does not integrate information from multiple heterogeneous information sources...it simply flags one e-mail as "junk".

The Examiner has argued on page 2 of the Office Action that Paul looks at the subject and text of a single incoming e-mail and can highlight any data that matches the user's subject preference list or place the e-mail is a special folder for the e-mail recipient to review. The Examiner is equating this treatment of a single e-mail from a single source as "extracting relationship information from multiple, heterogeneous sources." Applicants respectfully assert that the Paul system looks at one e-mail from one source, that the Paul system does not teach or suggest relationship information being in or extracted from the incoming e-mail, and that the Paul system does not extract any information from the single source e-mail. Rather, the Paul system examines e-mail content (and not relationship information) from a single source (not multiple heterogeneous sources) and either moves it or "flags" it (not extracting and integrating with other relationship information).

The Examiner goes on to conclude that the Paul patent teaches or suggests extracting and integrating relationship

information by using alert signals which are automatically added to a stored exclusion list. The Paul alert signals are received from homogeneous network sources and are used to update the exclusion list at the user site. The spam probe "sources" are said to extract source data from the e-mails, but that does not teach or suggest that the user site extracts relationship information from its source (i.e., from the spam probe). Relationship information is not extracted by the user site from a source under the Paul teachings. Rather, exact e-mail address/source information is delivered to the user site. Further, the e-mail address information which is provided to the user site is not relationship information, it is address information. Again Applicants note that "relationship information" was expressly defined for the present invention and does not mean "anything related to a communication". Finally, Applicants assert that the Paul updating of an exclusion list with an e-mail address is not the same as or suggestive of integrating relationship information from multiple heterogeneous sources.

The Examiner next argues (in the second paragraph on page 3) that the receiving of alert signals from spam probes comprises automatically building and storing a relationship data structure. Applicants respectfully assert that the Examiner is using the same Paul teachings to negate two distinct steps of the invention (extracting and integrating in one step and building and storing

in the next distinct step), when clearly Paul is only performing one function. Further, the alert signals are used for updating a list with the new e-mail/source address information from one of multiple HOMOGENEOUS spam probe sources. Again Applicants argue that Paul does not have multiple heterogeneous sources; does not obtain relationship information from its sources; does not extract any information from the sources, but simply receives an alert from those sources; and, does not build a relationship data structure, but simply adds an entry to a list. Applicants again conclude that the Paul patent simply does not obviate the invention as claimed.

The Examiner again acknowledges that Paul does not teach the building of a relationship data structure and yet concludes that it would be obvious to modify Paul to include that step. Applicants respectfully argue that, absent some teachings which would motivate one skilled in the art to so modify the Paul patent, the Examiner cannot conclude that such would be an obvious "leap". The Paul patent makes no mention of relationship information, let alone of using relationship information or of building a relationship data structure.

Finally, Applicants again argue that there is nothing in Paul which teaches or suggests the step of modifying a query based on the relationship data structure. Paul is not directed to information retrieval and makes no mention of query processing in any context. Clearly, therefore, one would not logically

modify Paul to include queries and the modification of queries based on a relationship data structure. The Examiner has attempted to equate the Paul filtering of incoming e-mails with an exclusion list as query processing and to equate the updating of the exclusion list as modifying a query. Applicants have amended the independent claims to highlight the fact that the query which is being modified using relationship information is a query which the user generates for information retrieval. It is not a "query" to filter incoming user mail, it is an information retrieval query. The claim step is not directed to modifying the data structure but to modifying a query based on information in the relationship data structure to expedite processing of the query. The Examiner states that the Paul patent implicitly shows the claimed modifying because the e-mail is marked, which marking may affect subsequent processing. While marking the e-mail is a filtering technique which can assist a human user in subsequent mail processing, such is not the same as nor suggestive of automatically modifying a query based on a relationship data structure. Paul does not modify the e-mail; it simply marks it. Moreover, the e-mail is mot marked based on a relationship data structure which has been automatically built to represent relationship information which has been automatically extracted and integrated from multiple heterogeneous information sources. Paul simply marks the e-mail because some of its content matches an entry on an exclusion list.

Finally, the Examiner concludes that it would have been obvious for Paul to build and store a relationship data structure. Applicants respectfully disagree. What the Paul patent teaches, in the cited passages at Columns 8 and 9, is the e-mail filtering using an exclusion list, or a plurality of exclusion lists, one for each e-mail address if implemented at a server. There is simply nothing in the Paul patent which teaches or suggests that relationships between prior and present communications be detected by extraction and integration of relationship information. Further, there is no suggestion that a relationship data structure be created based on such extraction and integration. Finally, there is nothing to suggest that queries be modified at all, let alone based on relationship information in a relationship data structure which has been built and stored based on the extraction and integration of information from prior communications.

Applicants respectfully assert that the terms which are used in the pending claims are not arbitrarily chosen, nor can they be arbitrarily re-interpreted by the Examiner. The claimed relationship information is defined and explained in the Specification (see: e.g., page 7, line 12-page 8, line 12; and page 10, line 8-page 20, line 7) and cannot simply be re-defined by the Examiner to mean merely "entries on a manually-created user exclusion list". Paul's exclusion list is NOT a relationship data structure and the Paul entries are not

relationship information. Accordingly, one skilled in the art would not leap to the conclusion that Paul's system for comparing incoming text to a list of entries could be modified to automatically extract relationship information from prior communications and proceed to integrate, build, store, and use such relationship information, let alone modify future communications/queries based on that relationship information. Applicants respectfully request that the Examiner reconsider the language of the claims, in light of the Specification, and withdraw the rejections.

Based on the foregoing amendments and remarks, Applicants request entry of the amendments, withdrawal of the rejections, and issuance of the claims.

Respectfully submitted,
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